

"Volatile Organic Compounds" Definition per 40 CFR Part 51.100(s) (as amended through January 18, 2007)

(s) *Volatile organic compounds (VOC)* means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(1) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity:

methane
ethane
methylene chloride (dichloromethane)
1,1,1-trichloroethane (methyl chloroform)
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)
trichlorofluoromethane (CFC-11)
dichlorodifluoromethane (CFC-12)
chlorodifluoromethane (HCFC-22)
trifluoromethane (HFC-23)
1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)
1,1,1-trifluoro 2,2-dichloroethane (HCFC-123)
1,1,1,2-tetrafluoroethane (HFC-134a)
1,1-dichloro 1-fluoroethane (HCFC-141b)
1-chloro 1,1-difluoroethane (HCFC-142b)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-134)
1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
parachlorobenzotrifluoride (PCBTf)
cyclic, branched, or linear completely methylated siloxanes
acetone
perchloroethylene (tetrachloroethylene)
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee)
difluoromethane (HFC-32)
ethylfluoride (HFC-161)
1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
1,1,2,2,3-pentafluoropropane (HFC-245ca)
1,1,2,3,3-pentafluoropropane (HFC-245ea)
1,1,1,2,3-pentafluoropropane (HFC-245eb)
1,1,1,3,3-pentafluoropropane (HFC-245fa)
1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
1,1,1,3,3-pentafluorobutane (HFC-365mfc)
chlorofluoromethane (HCFC-31)
1 chloro-1-fluoroethane (HCFC-151a)
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)

1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C ₄ F ₉ OCH ₃ or HFE-7100)
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF ₃) ₂ CFCF ₂ OCH ₃)
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C ₄ F ₉ OC ₂ H ₅ or HFE-7200)
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF ₃) ₂ CFCF ₂ OC ₂ H ₅)
<p>methyl acetate, 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃, HFE-7000), 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500), 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea), methyl formate (HCOOCH₃), (1) 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300) and perfluorocarbon compounds which fall into these classes:</p> <p>(i) Cyclic, branched, or linear, completely fluorinated alkanes;</p> <p>(ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;</p> <p>(iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations</p> <p>and</p> <p>(iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.</p>

(2) For purposes of determining compliance with emissions limits, VOC will be measured by the test methods in the approved State implementation plan (SIP) or 40 CFR part 60, appendix A, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the enforcement authority.

(3) As a precondition to excluding these compounds as VOC or at any time thereafter, the enforcement authority may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the enforcement authority, the amount of negligibly-reactive compounds in the source's emissions.

(4) For purposes of Federal enforcement for a specific source, the EPA shall use the test methods specified in the applicable EPA-approved SIP, in a permit issued pursuant to a program approved or promulgated under title V of the Act, or under 40 CFR part 51, subpart I or appendix S, or under 40 CFR parts 52 or 60. The EPA shall not be bound by any State determination as to appropriate methods for testing or monitoring negligibly-reactive compounds if such determination is not reflected in any of the above provisions.

(5) The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

(6) For the purposes of determining compliance with California's aerosol coatings reactivity-based regulation, (as described in the California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 8.5, Article 3), any organic compound in the volatile portion of an aerosol coating is counted towards that product's reactivity-based limit. Therefore, the compounds identified in paragraph (s) of this section as negligibly reactive and excluded from EPA's definition of VOCs are to be counted towards a product's reactivity limit for the purposes of determining compliance with California's aerosol coatings reactivity-based regulation.